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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/612,876

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John C. Jones

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07/03/2008

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EXAMINER

DINH, DUC Q

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

07/03/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/612,876	Applicant(s) JONES ET AL.	
	Examiner Duc Q. Dinh	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 13 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is responsive to the Applicant's communication filed on April 08 2008.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (AAPA) in view of Uno et al (U.S Patent No. 5,748, 276), hereinafter Uno.

In reference to claim 1 (AAPA: page 21) discloses a light modulating device (Figs 11) having at least one pixel comprising a plurality of separately addressable sub-pixels of different areas and wherein the area of a first separately addressable sub-pixel (1) is smaller than a area of a second separately addressable sub-pixel (4) wherein the first and second sub-pixels each have an equal number of selectable transmission/reflection levels, said number of selectable transmission/reflection levels being more than two, the device further comprising an addressing means (Fig. 2) for selectively addressing the sub-pixels so as to select any one of more than two transmission/reflection levels (AAPA page 21, lines 16-25).

Accordingly, AAPA discloses everything except the area of the second sub-pixel is not substantially a multiple of the area of the first separately addressable sub-pixel.

Uno discloses in Fig. 1a a pixel of the light modulating device having a pixel comprising sub-pixel 26b separately addressable by voltage Vlc2 and that is not substantially a multiple area of the first sub-pixel 26a separately addressable by voltage Vlc1. (see Fig. 1c)

It would have been obvious for one of ordinary skill in the art at the time of the invention to modified the ratio of the sub-pixel areas with areas is not substantially a multiple area of other sub-pixels in the device of AAPA in view of the teaching of Uno because by controlling the ratio of display area and the difference in driving voltage between sub pixels, the gradation reversal observed from the main viewing angle is removed and good multiple gradation display properties are obtained even in a liquid crystal display unit having only two sub pixels for each pixel (col. 7, lines 19-26 of Uno).

In addition, **absent a showing of criticality** and/or unexpected results, it would been obvious to one having ordinary skill in the art change the size of the sub-pixels as desired as was judicially recognized with IN RE ROSE, 105 USPQ 237 (CCPA 1955) which recognizes that the change in size or range of well known elements, i.e. sub-pixels, is normally not directed toward patentable object matter.

In reference to claim 2, the AAPA discloses the addressing means is adapted to address each sub-pixel with any one of a predetermined set of addressing waveforms (Figs. 1, 3).

In reference to claims 3 and 4, the AAPA discloses each sub-pixel of a divided pixel can be sub-divided area, i.e. latching regions, with different latching thresholds and are adapted to exhibit the same number of partial latching level (page 4, lines 11-24).

In reference to claim 5, AAPA discloses the area of the second separately addressable sub-pixel has the next largest area to the first addressable sub-pixel Fig. 11, and Uno discloses the second sub-pixel has the next largest area to the first sub-pixel also (see Fig. 1a of Uno).

In reference to claims 6 and 7, refer to the rejection as applied to claim 1 and Figs 1-4, and Fig. 1a of Uno for the limitation the area of each separately addressable sub-pixel is not multiple area of the next smallest separately addressable sub-pixel.

In reference to claim 8, the AAPA discloses the latching regions adapted such that, in certain conditions, partial latching of a latching region can occur (after blanking level the pixel into one stable state and intermediate voltage is applied; page 1, lines 31-34).

In reference to claim 9, the AAPA discloses the ratio of the addressable sub-pixels is chosen so that there is no redundant grey levels when operating conditions that allow partial latching and also when operating conditions that do not allow partial latching (at least two of the bits are addressed with more than two grey levels, i.e. more than just black and white transmission/reflection, and at least one bit is address lesser number of grey level, i.e. there is no redundant grey levels; (page 2, line 32-col. 3, line 2) and bipolar pulse are required to prevent unwanted latching effects due to a net DC across the pixel, i.e.: not allow partial latching).

In reference to claim 10, AAPA discloses in Fig. 11, there are only two addressable sub-pixels and Fig. 1a of Uno shows only two addressable sub-pixels as shown in Figs 1a.

In reference to claim 11, Uno discloses the ratio of the first and second sub pixels is chosen from $n:2n+1$ as claimed.

In reference to claim 12, the AAPA discloses the device is a zenithal bistable liquid crystal display as claimed.

Response to Arguments

4. Applicant's arguments (see pages 2-3 of the Remarks) with respect to the Art Rejection have been considered but are not persuasive. Applicant argues that "Uno does not teach or suggest that sub-pixels 21a and 21b are separately addressable". However, Uno teaches "means for applied different voltages to a liquid crystal layer of each sub-pixel. The ratio of display area between sub-pixels (21a and 21b) and different in driving voltages (V_{lc1} and V_{lc2}) are controlled, i.e. control means separately addresses each sub-pixels (with V_{lc1} and V_{lc2}) of different areas (21a and 21b) [see col. 3, lines 10-15]. Furthermore, Uno teaches the separately addressable sub-pixels 21a and 21b is not substantially a multiple areas of one another (col. 7, lines 19-20). Accordingly, Uno clearly teaches sub-pixels 26 and 26b are separately addressable and sub-pixel 26 b is not substantially a multiple area of sub-pixel 26a. The rejection is maintained.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc Q. Dinh whose telephone number is (571) 272-7686. The examiner can normally be reached on Mon-Fri from 8:00.AM-4:00.PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHARD HJERPE can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Duc Q Dinh/

Primary Examiner, Art Unit 2629

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